

AMENDMENTS TO THE CLAIMS

1. (CURRENTLY AMENDED) A plasma generation system comprising a high voltage generator ~~(20)~~—connected to at least two electrodes ~~(26, 28)~~, one having a large radius of curvature while the other has a small radius of curvature, characterized in that said high voltage generator is controlled in such a way as to maintain constant the average frequency of occurrence of current discharges from the at least one electrode with a small radius of curvature ~~(26)~~—to the at least one electrode with a large radius of curvature ~~(28)~~.

2. (ORIGINAL) The plasma generation system as claimed in claim 1, characterized in that said electrode with a large radius of curvature has a plane geometry.

3. (CURRENTLY AMENDED) The plasma generation system as claimed in claim 1—~~or claim 2~~, characterized in that it additionally comprises a dielectric insulator ~~(30)~~—inserted between the electrodes and in that said high voltage generator is a sinusoidal or pulsed alternating generator ~~(20)~~.

4. (CURRENTLY AMENDED) The plasma generation system as claimed in claim 3, characterized in that said high voltage generator comprises a high gain transformer ~~(40)~~—driven by a transistor ~~(42)~~—operating in switching mode under the control of a low voltage signal generator ~~(46)~~—having a specified fixed frequency and a variable mark-space ratio.

5. (CURRENTLY AMENDED) The plasma generation system as claimed in claim 1, characterized in that it additionally comprises a resistance ~~(48)~~—connected between an earth potential and the at least one electrode with a large radius of curvature, to measure a voltage representing the current discharges from the at least one electrode with a small radius of curvature to the at least one electrode with a large radius of curvature.

6. (CURRENTLY AMENDED) The plasma generation system as claimed in claim 1, characterized in that it additionally comprises a current transformer ~~(92)~~—connected in the electrical circuit ~~(22)~~—supplying the electrodes, to measure a current representing the current discharges from the at least one electrode with a small radius of curvature to the at least one electrode with a large radius of curvature.

7. (CURRENTLY AMENDED) The plasma generation system as claimed in claim ~~5~~~~or~~~~6~~, characterized in that it additionally comprises a high pass or band pass filter~~(50)~~, so that only the part of said measured signal ~~(74)~~—representing the discharges occurring between the electrodes is recovered.

8. (CURRENTLY AMENDED) The plasma generation system as claimed in claim 7, characterized in that the measured and filtered signal ~~(76)~~—is converted by a conversion system~~(34)~~, during a specified fixed period, into a specified continuous voltage ~~(82)~~—representing a mean number of electrical discharges.

9. (CURRENTLY AMENDED) The plasma generation system as claimed in claim 8, characterized in that said measured mean number of discharges is maintained by a control system ~~(36)~~ at a specified set value ~~(38, 80)~~ corresponding to said mean frequency of occurrence of the current discharges.

10. (CURRENTLY AMENDED) The plasma generation system as claimed in claim 3, characterized in that said high voltage generator comprises a high voltage chopper ~~(98)~~ distributing, alternately, a positive continuous high voltage and a negative continuous high voltage to the at least one electrode with a small radius of curvature ~~(26)~~ under the control of a low voltage signal generator ~~(46)~~ with a specified fixed frequency and a variable mark-space ratio.

11. (CURRENTLY AMENDED) The plasma generation system as claimed in claim ~~1 or claim 2~~, characterized in that the high voltage generator is a continuous generator.

12. (CURRENTLY AMENDED) The plasma generation system as claimed in claim 11, characterized in that said high voltage generator comprises a rectifier circuit ~~(96)~~ connected to the output of a high gain transformer ~~(40)~~ driven by a transistor ~~(42)~~ operating in switching mode under the control of a low voltage signal generator ~~(46)~~ having a specified fixed frequency and a variable mark-space ratio.

13. (CURRENTLY AMENDED) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in

~~any one of claims 1 to 12.~~

14. (NEW) The plasma generation system as claimed in claim 2, characterized in that it additionally comprises a dielectric insulator inserted between the electrodes and in that said high voltage generator is a sinusoidal or pulsed alternating generator.

15. (NEW) The plasma generation system as claimed in claim 14, characterized in that said high voltage generator comprises a high gain transformer driven by a transistor operating in switching mode under the control of a low voltage signal generator having a specified fixed frequency and a variable mark-space ratio.

16. (NEW) The plasma generation system as claimed in claim 6, characterized in that it additionally comprises a high pass or band pass filter, so that only the part of said measured signal representing the discharges occurring between the electrodes is recovered.

17. (NEW) The plasma generation system as claimed in claim 16, characterized in that the measured and filtered signal is converted by a conversion system, during a specified fixed period, into a specified continuous voltage representing a mean number of electrical discharges.

18 (NEW) The plasma generation system as claimed in claim 17, characterized in that said measured mean number of discharges is maintained by a control system at a specified set value

corresponding to said mean frequency of occurrence of the current discharges.

19. (NEW) The plasma generation system as claimed in claim 14, characterized in that said high voltage generator comprises a high voltage chopper distributing, alternately, a positive continuous high voltage and a negative continuous high voltage to the at least one electrode with a small radius of curvature under the control of a low voltage signal generator with a specified fixed frequency and a variable mark-space ratio.

20. (NEW) The plasma generation system as claimed in claim 2, characterized in that the high voltage generator is a continuous generator.

21. (NEW) The plasma generation system as claimed in claim 20, characterized in that said high voltage generator comprises a rectifier circuit connected to the output of a high gain transformer driven by a transistor operating in switching mode under the control of a low voltage signal generator having a specified fixed frequency and a variable mark-space ratio.

22. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 2.

23. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 2.

24. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 4.

25. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 5.

26. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 6.

27. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 7.

28. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 8.

29. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 9.

30. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 10.

31. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature,

comprising a plasma generation system as claimed in claim 11.

32. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 12.

33. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 14.

34. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 15.

35. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 16.

36. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 17.

37. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 18.

38. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 19.

39. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 20.

40. (NEW) A system for plasma sterilization in the presence of moisture, at atmospheric pressure and at ambient temperature, comprising a plasma generation system as claimed in claim 21.